

Listing of Claims:

1-41. (Cancelled)

42. (Currently Amended) A system for conducting a lateral flow assay to detect the presence or quantity of an analyte in a sample, the system comprising:

(a) a lateral flow membrane strip comprising a detection zone, wherein upon application, the sample is capable of traversing through the membrane strip to the detection zone; and

(b) a reading device comprising:

(i) a housing having an exterior surface;

(ii) a light barrier structure ~~formed by~~ comprising a top plate and a bottom plate, said bottom plate being positioned adjacent to the exterior surface of said housing, wherein a receiving port is defined between said top plate and said bottom plate, said lateral flow membrane strip being capable of insertion into said receiving port, wherein said bottom plate defines a region through which electromagnetic radiation from said source is capable of passing before contacting said lateral flow membrane strip, said region having a size that approximates the size of said detection zone;

(iii) an electromagnetic radiation source; and

(iv) a sensor capable of detecting the intensity of electromagnetic radiation, wherein the electromagnetic radiation source and sensor are positioned so that electromagnetic radiation emitted from said source is capable of being reflected from said lateral flow membrane strip to said sensor.

43. (Currently Amended) The system of claim 42, further comprising a pressure plate that is positioned in said receiving port between said top plate and said bottom plate for bearing against said lateral flow membrane strip upon insertion.

44. (Previously Presented) The system of claim 43, wherein the pressure plate is spring loaded.

45. (Previously Presented) The system of claim 42, further comprising a light absorbing member positioned within said receiving port.

46. (Currently Amended) The system of claim 45, wherein said lateral flow membrane strip is positioned between said light absorbing member and said electromagnetic radiation source when inserted into said receiving port.

47. (Currently Amended) The system of claim 42, wherein said ~~bottom plate defines an~~ region is an aperture ~~through which electromagnetic radiation from said source is capable of passing before contacting said membrane strip.~~

48. (Previously Presented) The system of claim 42, wherein said receiving port defines a first stop position for a reference reading and a second stop position for a sample reading.

49. (Currently Amended) The system of claim ~~48~~ 49, wherein one or more of said stop positions is formed by notches in said bottom plate.

50. (Previously Presented) The system of claim 42, wherein a capture reagent is immobilized within the detection zone, the capture reagent being configured to directly or indirectly bind to the analyte.

51. (New) The system of claim 46, wherein said light-absorbing member comprises a flexible material.

52. (New) The system of claim 42, wherein said region is elongated.
53. (New) The system of claim 42, wherein said region is circular.
54. (New) The system of claim 42, wherein the area of said region is 1.8 times or less than the area of said detection zone.
55. (New) The system of claim 47, wherein the area of said region is 1.3 times or less than the area of said detection zone.
56. (New) The system of claim 42, wherein the electromagnetic radiation source comprises a light emitting diode.
57. (New) The system of claim 42, wherein the sensor comprises a photodiode.
58. (New) The system of claim 42, further comprising a display for providing results of the assay.
59. (New) The system of claim 42, further comprising a sample pad in fluid communication with said membrane strip, said sample pad defining the point of application for the sample.
60. (New) The system of claim 42, further comprising a wicking pad in fluid communication with said membrane strip.
61. (New) The system of claim 42, wherein said electromagnetic radiation source, said sensor, or combinations thereof, are positioned within said housing.